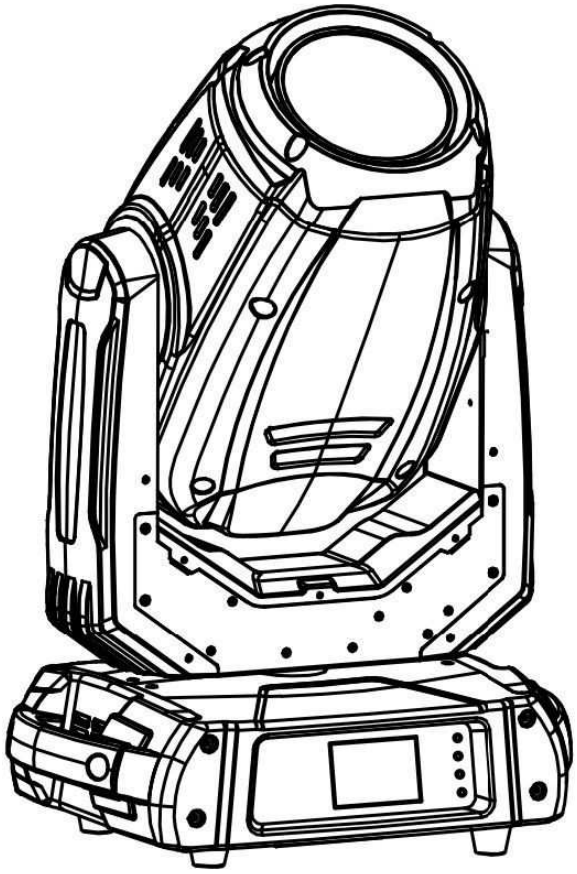
VIKING
STAGE LIGHTING

VK280 FLX MOVING HEAD



USER MANUAL

Rev 2.01

FOR YOUR OWN SAFETY, PLEASE READ THIS USER MANUAL CAREFULLY BEFORE YOU INITALLY START

This device has left our premises in absolutely perfect condition. In order to maintain this condition and to ensure a safe operation, it is absolutely necessary for the user to follow the safety instructions and warning notes written in this manual.

The manufacturer will not accept liability for any resulting damages caused by the non-observance of this manual or any unauthorized modification to the device.

Please consider that damages caused by manual modifications to the device are not subject to warranty.

This light was designed for indoor use and it is intended for professional application only. It is not for household use.

1. Safety instructions

CAUTION!
Disconnect the fixture from mains before you remove any cover of the fixture. With a high voltage you can suffer a dangerous electric shock when touching live wires and electrical parts under covers!

Make sure that the available voltage is not higher than stated on the rear panel of the fixture.
This fixture should be operated only from the type of power source indicated on the label. If you are not sure of the type of power supplied, consult your authorized distributor or local power company.

Always disconnect the fixture from AC power before cleaning, removing or installing the fuses, or any part.

The power plug has to be accessible after installing the fixture. Do not overload wall outlets and extension cords as this can result in fire or electric shock.

Do not allow anything to rest on the power cord. Do not locate this fixture where the cord may be damaged by persons walking on it.

Make sure that the power cord is never crimped or damaged by sharp edges. Check the fixture and the power cord from time to time.

Refer servicing to qualified service personnel.

This fixture falls under protection class I. Therefore this fixture has to be connected to a mains socket outlet with a protective earthing connection.

Do not connect this fixture to a dimmer pack.

During the initial start-up some smoke or smell may arise. This is a normal process and does not necessarily mean that the device is defective.

Do not touch the device's housing with bare hands during its operation (housing becomes

hot)! For replacement use lamps and fuses of same type and rating only.

CAUTION ! EYE DAMAGE !
Avoid looking directly into the light source!

If the fixture has been exposed to drastic temperature fluctuation (e.g. after transportation), do not switch it on immediately. The arising condensation water might damage your device. Leave the device switched off until it has reached room temperature.

Do not shake the fixture. Avoid brute force when installing or operating the fixture.

This fixture was designed for indoor use only; do not expose this unit to rain or use near water.

When choosing the installation spot, please make sure that the fixture is not exposed to extreme heat, moisture or dust.

Air vents and slots in the fixture´s head and base are provided for ventilation, to ensure reliable operation of the device and to protect it from overheating.

Do not block the front objective lens with any object when the fixture is under operation.

The openings should never be covered with cloth or other materials, and never must be blocked.

The fixture becomes very hot during operation. Allow the fixture to cool approximately 20 minutes prior to examination.

This fixture should not be placed in a built-in installation unless proper ventilation is provided.

Only operate the fixture after having checked that the housing is firmly closed and all screws are tightly fastened.

Always use a secondary safety cable when mounting this fixture.

Make sure that the area below the installation place is blocked when rigging, derigging or servicing the fixture.

Warning
The minimum distance between light output and the illuminated surface must be more than 10 meters.

The maximum ambient temperature 45°C must never be exceeded.

CAUTION!
The lens has to be replaced when it is obviously damaged,
so its function is not impaired, e. g. due to cracks or deep scratches!

Operate the device only after having familiarized with its functions. Do not permit operation by persons not qualified for operating the device. Most damages are the result of unprofessional operation!

CAUTION!
The lamp has to be replaced when it is damaged
or deformed due to the heat!

Please use the original packaging if the device is to be transported.

CAUTION!
Fast on-off-cycles (e.g. 10 min. on / 10 min. off) will reduce lamp life.

2. Installation

Fixtures must be installed by a qualified electrician in accordance with all national and local electrical and construction codes and regulations.

2.1 Connection to the mains

For protection from electric shock, the fixture must be earthed!

The VK280 FLX is equipped with auto-switching power supply that automatically adjusts to any 50-60Hz AC power source from 100-240 Volts.
This fixture must be earthed. To use the fixture, a plug must be fixed.
The correct assembly of a sufficient plug may be done by professional persons only.
The conductors in the cable are marked by the following table.

Core (EU)	Core (US)	Connection	Plug Terminal Marking
Brown	Black	Live	L
Light blue	White	Neutral	N
Green /Yellow	Green	Earth	⏚

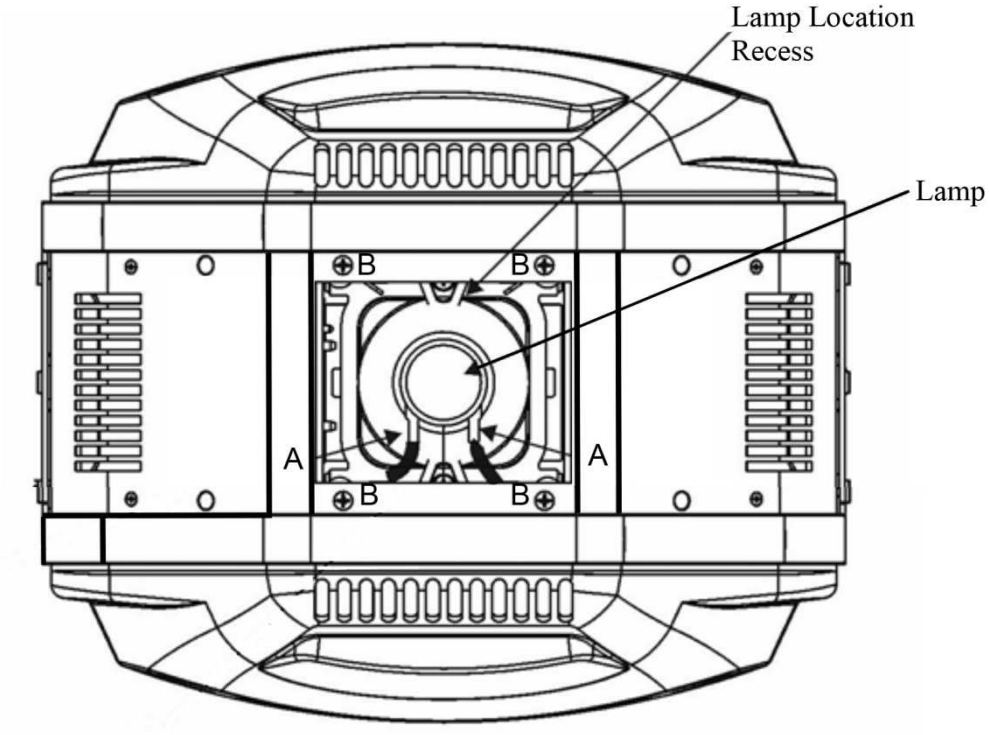
2.2 Changing the lamp

DANGER!
Install the lamp with the fixture unplugged from mains!

To insert a new lamp.

1. Disconnect the fixture from mains and allow it to cool at least 20 minutes.
2. Remove the 4 Crosshead screws labeled (B) in diagram below that secure the lamp access cover and remove the square cover to gain access to the lamp compartment.
3. Remove both Spade Crimp Connectors (A) from the flat terminal blades on the lamp.
4. Holding the lamp by its ceramic base carefully pull the lamp outwards until you break force of spring locks keeping the lamp in the lamp location recess.
5 Holding the new lamp by its ceramic base , gently insert the lamp into lamp compartment until it snaps into spring locks in the lamp location recess
   Do not install a lamp with a higher wattage! A lamp like this generates temperatures the device is not designed for. Damages caused by non-observance are not subject to warranty. Please follow the lamp manufacturer's notes!
   Warning: do not touch the lamp's envelope with bare hands. Should this happen, clean the bulb with a cloth soaked in alcohol and dry it
6. Slide both leads with Crimp connectors (A) onto the lamp blades and check this connection
7. Re-insert the lamp cover and tighten the four cross heads screws (B).
8. Connect the fixture to the mains.
9. Reset the "Lamp On Time" and "Lamp Strikes" counters in the menu "Information".

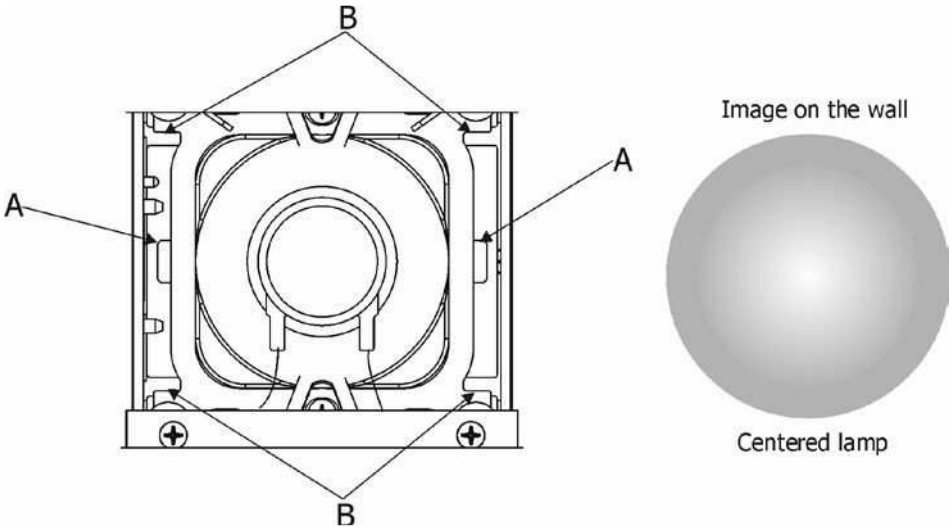
Never operate this fixture without the lamp!
Do not operate this fixture without the lamp cover!



2.3 Lamp adjustment

The lamp holder is aligned at the factory. Due to differences between lamps, the fine adjustment may improve light performance.

For lamp adjustment there are four crosshead screws in position
B below that allow the centering of the lamp within the Lamp
Location Recess

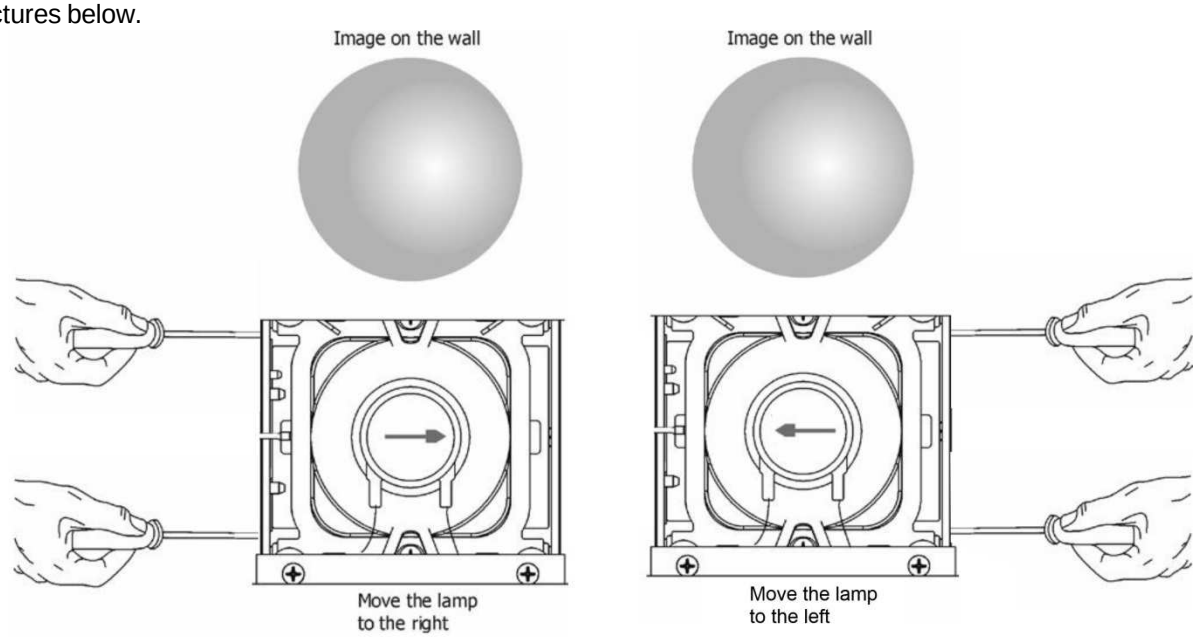


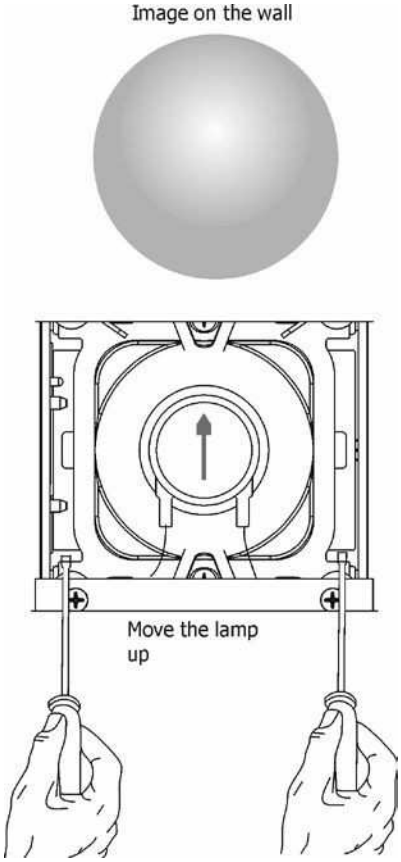
To adjust the lamp in the fixture.

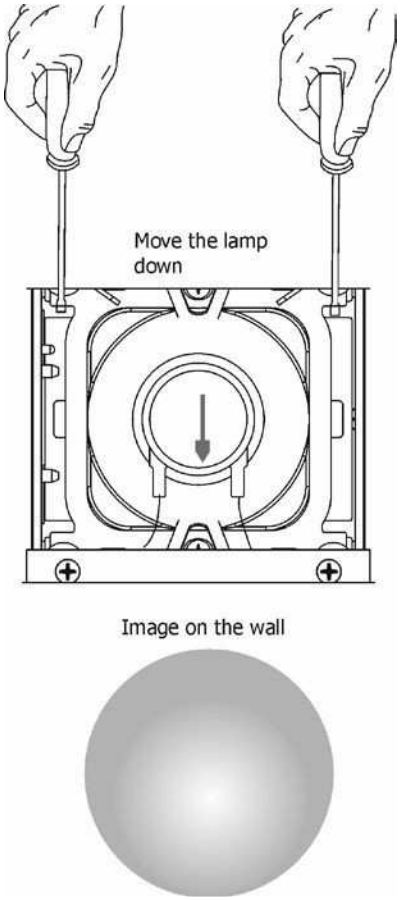
1. Connect the fixture to the mains, switch on the lamp, open shutter and dimmer, set zoom and focus (Static gobo wheel a rotating gobo wheel should be set at 0 DMX) and check the image on the wall
2. Disconnect the fixture from mains.
3. Remove the lamp cover as per fitting new lamp above to get into lamp compartment.
4. Move the lamp into desired position by using a suitable screwdriver inserted in the appropriate screws (B).
5. Replace the lamp cover and tighten the four crosshead screws.
6. Connect the fixture to the mains and check if the adjustment has been correctly made.
7. If you need to continue in adjusting, disconnect the fixture from mains and repeat steps 2-5.

The lamp must be adjusted with the fixture disconnected from mains!
Do not operate this fixture without the lamp cover!

Note: Due to light refraction in the fixture, the lamp has to be moved into direction of shifted hot-spot - see pictures below.





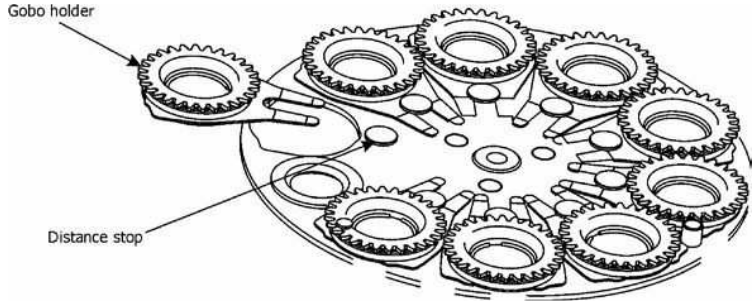


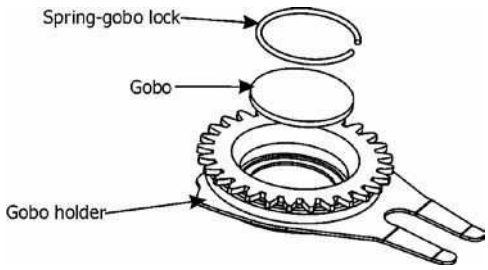
Note!
The adjusted hot-spot may move during the first 100 hours of the lamp operation (lamp stabilizes its burning) and the lamp adjusting has to be repeated.
(In some cases, the lamp adjusting has to be made every 100 hours of lamp operation.)

2.4 Replacing rotating gobos

DANGER!
Replace gobos with the device switched off only.
Unplug from mains before!

1. Disconnect the fixture from mains and allow it to cool.
2. Remove the bottom plastic cover of the head by loosening the 4 quarter-turn fasteners on the cover.
3. Gently pull up the gobo holder from the rotation gobo wheel.
4. Carefully remove the gobo and the spring gobo-lock from the gobo holder by pushing to the gobo from the side without toothed wheel. Do not touch the surface of the pattern of the glass gobo - use a suitable glove. Be careful! Glass!
5. Insert the new gobo (glazy side towards the lamp). Insert the spring-gobo lock to secure it in the gobo holder.
6. Insert the gobo holder back into rotating gobo wheel.
7. Replace the bottom cover before applying power.





2.5 Rigging the fixture

A structure intended for installation of the fixture (s) must safely hold weight of the fixture(s) placed on it. The structure has to be certificated to the purpose.

The fixture (fixtures) must be installed in accordance with national and local electrical and construction codes and regulation.

For overhead installation, the fixture must be always secured with a safety wire

When rigging, derigging or servicing the fixture staying in the area below the installation place, on bridges, under high working places and other endangered areas is forbidden.

The operator has to make sure that safety-relating and machine-technical installations are approved by an expert before taking into operation for the first time and after changes before taking into operation another time.

The operator has to make sure that safety-relating and machine-technical installations are approved by a skilled person once a year.

Allow the fixture to cool for ten minutes before handling.

The projector should be installed outside areas where persons may walk by or be seated.

IMPORTANT! OVERHEAD RIGGING REQUIRES EXTENSIVE EXPERIENCE, including calculating working load limits, installation material being used, and periodic safety inspection of all installation material and the projector. If you lack these qualifications, do not attempt the installation yourself, but use a help of professional companies.

CAUTION: Fixtures may cause severe injuries when crashing down! If you have doubts concerning the safety of a possible installation, do not install the fixture!

The fixture has to be installed out of the reach of the prying fingers of the public.

Danger of fire !
When installing the device, make sure there is no highly inflammable material (decoration articles, etc.) in a distance of min. 1 m.

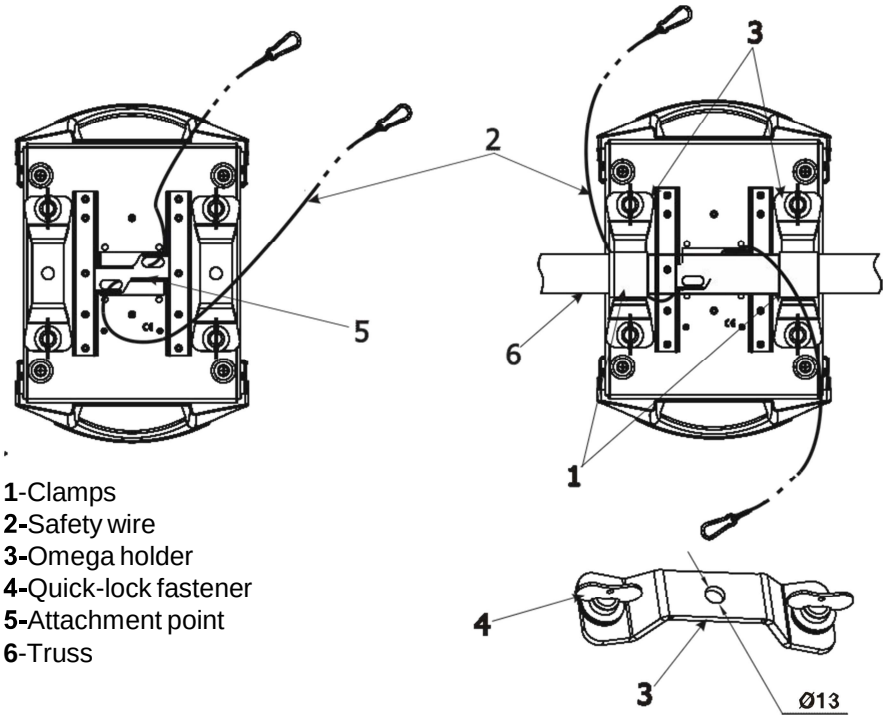
The special design of the temperature filter allows reduced distance between the fixture and lit objects, but the minimum distance of 10 meters between light output from the moving head and the lit objects must be kept!
(If the fixture is in eco mode, this distance can be reduced to 7.5 m)

CAUTION!
Use 2 appropriate clamps to rig the fixture on the truss.
Follow the instructions mentioned at the bottom of the base.
Make sure that the device is fixed properly! Ensure that the structure (truss) to which you are attaching the fixtures is secure.

The fixture can be placed directly on the stage floor or rigged in any orientation on a truss without altering its operation characteristics.
For securing a fixture to the truss, install a safety wire that can hold at least 10 times the weight of the fixture. Use only the safety wire with screw-on carabineer. Pull the safety wire through the safety attachment point on the bottom of the base and around the truss as shown on the pictures below.

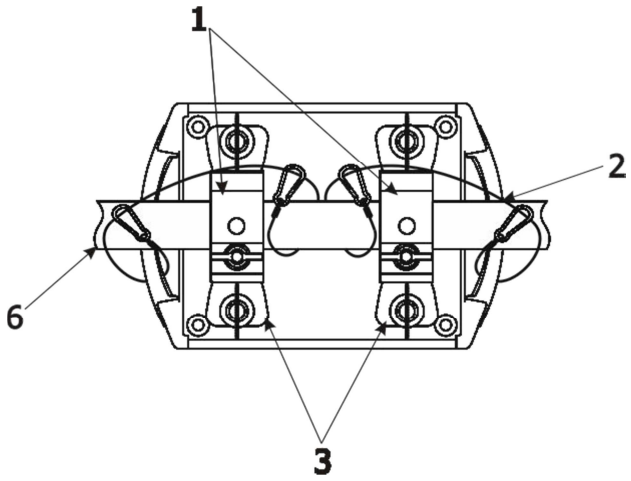
Truss installation

1. Bolt each clamp (1) to the omega holder (3) with M12 bolt and lock nut through the hole in the holder.
2. Fasten the omega holders on the bottom of the base by inserting both quick-lock fasteners (4) into the holes of the base and tighten fully clockwise.
3. Pull the safety wire (2) through the attachment point and around the truss (6).



1-Clamps
2-Safety wire
3-Omega holder
4-Quick-lock fastener
5-Attachment point
6-Truss

Alternatively, fixtures handles can be used for safety attachment



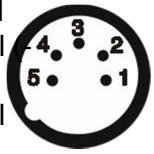
When installing fixtures side-by-side,
avoid illuminating one fixture with another!

DANGER TO LIFE!
Before taking into operation for the first time, the installation has to be approved by an expert!

2.6 DMX-512 connection

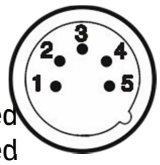
The fixture is equipped with both 3-pin and 5-pin XLR sockets for DMX input and output. The sockets are wired in parallel.
Only use a shielded twisted-pair cable designed for RS-485 and 3-pin or 5-pin XLR-plugs and connectors in order to connect the controller with the fixture or one fixture with another.

DMX - output
XLR mounting-sockets (rear view):



1 - Shield
2 - Signal (-)
3 - Signal (+)
4 - Not connected
5 - Not connected

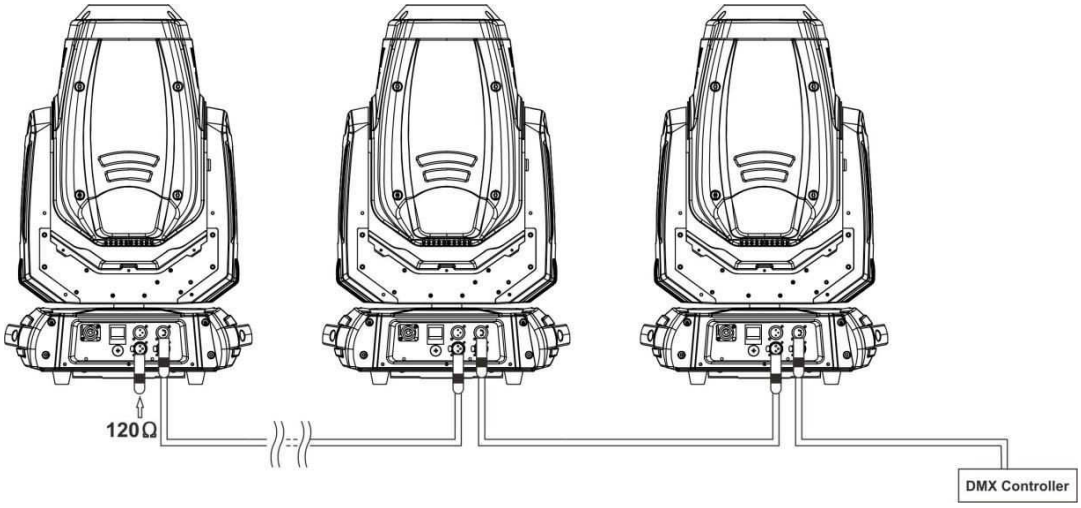
DMX-input
XLR mounting-plugs (rear view):



1 - Shield
2 - Signal (-)
3 - Signal (+)
4 - Not connected
5 - Not connected

If you are using the standard DMX controllers, you can connect the DMX output of the controller directly with the DMX input of the first fixture in the DMX-chain. If you wish to connect DMX-controllers with other XLR-out- puts, you need to use adapter-cables.

Building a serial DMX-chain:



Connect the DMX-output of the first fixture in the DMX-chain with the DMX-input of the next fixture. Always connect one output with the input of the next fixture until all fixtures are connected.
Caution: At the last fixture, the DMX-cable has to be terminated with a terminator. Solder a 120 Ω
resistor between Signal (–) and Signal (+) into a 3-pin XLR-plug and plug it in the DMX-output of the last fixture.

Viking VK280 FLX LCD Menu

Tab	Level 1	Level 2	Level 3
	FEATURES SETTING	Run Mode	WIRE/AUTO/DMX
		ChanMode	SMAL/STANDEFE
		X Reverse	ON/OFF
		Y Reverse	ON/OFF
		XY Speed	NORM/FAST/SLOW
		X. Angle	360/540/630
		XY Fback	ON/OFF
		SignalClear	ON/OFF
		Full Color	ON/OFF
		Shortcut	ON/OFF
		RST.	
		SAVE	
		ESC	
		ADV.	Zero. Set
			Chan. Def.
			Fact. Set
			Use. Mang.
			ESC
		UNLOCK	
			PassWord1(0-255)
			PassWord2(0-255)
			KEY
			ESC
			Passport1
		Zero. Set/Chan. Def.	1
		Fact. Set	1
		Use. Mang.	3
	MANUAL	LAMP REST	ALL MOTOR
			PART MOTOR
			XY MOTOR
			YES
			NO
		TEST RUN	AUTO
			SOUND
			ESC
		SMULATE DMX	CH1-CH32(0-255)
			ESC

	SYSTEM INFO	DMX VALUE	CH1-CH32(0-255)
			ESC
		OTHER INFO	Run Time(0-9999)
			Run Count(0-9999)
			Lamp Strikes T(0-9999)
			Lamp Strikes C(0-9999)
			Fan 1(0-9999)
			Fan 2(0-9999)
			Temp 1(0-100)
			Temp 2(0-100)
			PCB1 Ver
			PCB2 Ver
			PCB3 Ver
			ESC
		ERROR INFO	Color
			RotGobos
			FixeGobo
			Plane
			Tilt
			RotGobos1
			Prism
			Effect
			Prism.R
			Effect.R
			Zoom
			Focus
			ESC
		ESC	
	DISPLAY SETTING	Brightness	Level 1-7
		LightDelay	10Sec/20Sec/30Sec/On
		Menuback	10Sec/20Sec/31Sec/Off
		Flicker	Off/On
		Save	
		ESC	
	LAMP SETTING	Default	ON/OFF
		Manual	ON/OFF
		Electronic	ON/OFF
		Back	Back to last level
	Rotate Display	Change orientation of the display	
	No Function	No Function	
	Back	Back to LOGO tab	

3. DMX Protocol

Standard Mode	Compact Mode	DMX Value	Channel Function
1	1	0－255	**Pan**
2		0－255	**Pan Fine**
3	2	0－255	**Tilt**
4	*	0－255	**Tilt Fine**
5	3	0－255	**Pan/Tilt Speed**
6	4		**Macro function**
		0－49	Blank
		50－59	Pan/Tilt Speed Mode
		60－69	Pan/Tilt Time Mode
		70－79	Light Blackout When Pan/Tilt Rotate
		80－89	Light Not Blackout When Pan/Tilt Rotate
		90－99	Light Blackout When Color Wheel Rotate
		100－109	Light Not Blackout When Color Wheel Rotate
		110－119	Light Blackout When Fixed Gobo Wheel Rotate
		120－129	Light Not Blackout When Fixed Gobo Wheel Rotate
		130－139	Lamp On By Controller
		140－149	Pan/Tilt Reset
		150－189	Effects Reset
		190－199	Blank
		200－209	Light Reset
		210－229	Blank
		230－239	Lamp Off By Controller
		240－255	Blank
7	5		**Color Wheel - Continuous Positioning**
		0	White
		9	Deep Red
		18	Deep Blue
		27	Yellow
		37	Green
		46	Magenta
		55	Azure
		64	Red
		73	Deep Green
		82	Amber
		91	Blue
		101	Orange
		110	Cooling
		119	Fluorescent Blue
		128－129	White
			Positioning by color
		130－134	Crimson
		135－138	Deep Blue
		139－143	Yellow
		144－147	Green
		148－152	Magenta
		153－157	Azure
		158－161	Red
		162－166	Deep Green

		167－171	Amber
		172－176	Blue
		177－180	Orange
		181－185	Cooling
		186－189	Fluorescent Blue
		190－215	Forwards rainbow effect from fast to slow
		216－217	Rainbow Effect Stop
		218－243	Backwards rainbow effect from slow to fast
		244－249	Random colour selection by sound control
		250－255	Random colour selection by audio control
8			Blank
9	6		Blank
			Fixed Gobo
		0－3	Blank
		4－9	Gobo 1
		10－15	Gobo 2
		16－21	Gobo 3
		22－27	Gobo 4
		28－33	Gobo 5
		34－39	Gobo 6
		40－45	Gobo 7
		46－51	Gobo 8
		52－57	Gobo 9
		58－63	Gobo 10
		64－69	Beam reducer 1
		70－75	Beam reducer 2
		76－87	Beam reducer 3
			Shaking gobos from slow to fast
		88－95	Gobo 1
10	7	96－103	Gobo 2
		104－111	Gobo 3
		112－119	Gobo 4
		120－127	Gobo 5
		128－135	Gobo 6
		136－143	Gobo 7
		144－151	Gobo 8
		152－159	Gobo 9
		160－167	Gobo 10
		168－175	Beam reducer 1
		176－183	Beam reducer 2
		184－199	Beam reducer 3
		200－201	Open
		202－221	Forwards fixed gobo wheel rotation from fast to slow
		222－223	Gobo Stop
		224－243	Backwards fixed gobo wheel rotation from slow to fast
		244－249	Random gobo selection by sound control
		250－255	Random gobo selection by audio control
			Rotating gobo wheel (Index on channel 12 / 9)
		0－4	Blank
		5－7	Gobo 1
11	8	8－10	Gobo 2
		11－13	Gobo 3
		14－16	Gobo 4
		17－19	Gobo 5
		20－22	Gobo 6

11	8	23－25	Gobo 7
		26－28	Gobo 8
		29－31	Gobo 9
			Rotation (set rotation on channel 12 / 9)
		32－34	Gobo 1
		35－37	Gobo 2
		38－40	Gobo 3
		41－43	Gobo 4
		44－46	Gobo 5
		47－49	Gobo 6
		50－52	Gobo 7
		53－55	Gobo 8
		56－59	Gobo 9
			Gobo shake slow to fast **(set indexing on channel 12 / 9)**
		60－67	Gobo 1
		68－75	Gobo 2
		76－83	Gobo 3
		84－91	Gobo 4
		92－99	Gobo 5
		100－107	Gobo 6
		108－115	Gobo 7
		116－123	Gobo 8
		124－129	Gobo 9
			Gobo shake slow to fast **(set rotation on channel 12 / 9)**
		130－137	Gobo 1
		138－145	Gobo 2
		146－153	Gobo 3
		154－161	Gobo 4
		162－169	Gobo 5
		170－177	Gobo 6
		178－185	Gobo 7
		186－193	Gobo 8
		194－199	Gobo 9
		200－201	Blank
		202－221	Forward flowing rotation from fast to slow
		222－223	Rotation stop
		224－243	Reverse flowing rotation from slow to fast
		244－249	Random Rotation gobo selection by sound control
		250－255	Auto Random Rotation gobo selection fast - slow
12	9		**Gobo Rotation**
		0－127	Indexing
		128－177	Backwards gobo rotation from slow to fast
		178－203	Stop
		204－255	Forwards gobo rotation from fast to slow
13		0－255	Blank
14	10		**Prism**
		0－19	Open
		20－49	6-facet linear prism – Indexing
		50－75	6-facet circular prism - Rotation

14	10	76－105	8-facet linear prism - Indexing
		106－127	8-facet circular prism- Rotation
		128－135	Macro function 1
		136－143	Macro function 2
		144－151	Macro function 3
		152－159	Macro function 4
		160-167	Macro function 5
		168-175	Macro function 6
		176-183	Macro function 7
		184-191	Macro function 8
		192-199	Macro function 9
		200-207	Macro function 10
		208-215	Macro function 11
		216-223	Macro function 12
		224-231	Macro function 13
		232-239	Macro function 14
		240-247	Macro function 15
		248-255	Macro function 16
15	11		**Prism rotation**
		1-127	Clockwise from fast to slow
		128-129	No Rotation
		130-255	Counterclockwise from slow to fast
16	12		**Frost**
		0-64	Blank
		65－255	Frost from 0% to 100%
17	13		**Zoom**
		0－255	Zoom from max. to min. beam angle
18		0－255	**Fine zooming**
19	14	0－255	**Focus**
20		0－255	**Fine focusing**
21		0－255	Blank
22	15		**Shutter/Strobe**
		0－31	Shutter closed
		32－63	Shutter open
		64－95	Strobe-effect from slow to fast
		96－127	Strobe open
		128－143	Closing pulse in sequences from fast to slow
		144－159	Opening pulse in sequences from slow to fast
		160－191	Shutter open
		192－223	Random strobe-effect from slow to fast
		224－255	Shutter open
23	16	0－255	**Dimmer** intensity from 0% to 100%
24			Blank

4. Technical Specifications

Electrical

Power supply: ..... electronic auto-ranging
Input voltage range: ..... supply 100-240V, 50/60Hz
Live Fuse: .....T 5 A/250V, 20mm Ceramic
Neutral Fuse: .....T 5 A/250V, 20mm Ceramic
Max. power consumption:.....470 W at 230V (I=2,05A,power factor 0.96)
Typical power consumption:.....390W at 230V (I=1.8A, power factor 0.95)
*Allow for a deviation of +/-10%

Lamp

Approved model: HRI 280W
Lamp life: 2000 hrs (Standard mode)
3000 hrs (Eco mode)

Ballast

Electronic

Optical System

High luminous-efficiency glass reflector
Beam range: 5°-20° (spot application)
2.5°-10° (beam application)

Colour wheel

13 dichroic filters + white

Static gobo wheel

10 metal gobos & 4 beam reducers

Rotating gobo wheel

9 glass gobos can be indexed and rotated in both directions at different speeds
Gobo wheel continuous rotation
Glass gobos:
"Slot&lock" system for easy replacement of gobos

Prisms

Rotating 6-facet linear prism with continuous rotation in both directions
Rotating 8-facet circular prism with continuous rotation in both directions

Zoom

Linear motorized zoom

Strobe

Strobe effect with variable speed (max.15 flashes/sec.)

Dimmer

Smooth dimmer from 0 - 100 %

Control

LCD touch screen
Readout fixture and lamp usage, receiving DMX values, temperatures, etc
Built-in analyzer for easy fault finding, error messages
Black-out while head moving, colour or gobo changing
Self-resettable thermo-fuse
Stand-alone operation
3 user editable programs, each up to 100 steps
Supported protocols: USITT DMX 512
2 DMX modes (16 or 24 control channels)

Pan/Tilt

Pan movement range 540°
Tilt movement range 270°
16 bit movement resolution
Automatic Pan/Tilt position correction
Movement control: tracking and vector
Pan/tilt-lock mechanism

Connection

DMX in/Out: 3-pin and 5-pin XLR Power
In: Chassis connector Powercon

Rigging

Mounting points: 2 pairs of 1/4-turn locks
Mounting horizontally or vertically via 2 Omega brackets

Temperatures

Maximum ambient temperature : 45° C
Maximum housing temperature : 90° C

Minimum distances

Min. distance from flammable surfaces: 1 m
Min. distance to lit objects (Standard mode-280W): 10 m
Min. distance to lit objects (Eco mode-230W): 7.5 m

Total heat dissipation

1600 BTU/h (calculated)
469 Wh (calculated)

Weight (net):

15 kg

The front objective lens will require weekly cleaning as smoke-fluid tends to building up residues, reducing the light-output very quickly. The cooling-fans should be cleaned monthly.
The interior of the fixture should be cleaned at least annually using a vacuum-cleaner or an air-jet.
Dichroic colour filters and gobo wheels and the internal lenses should be cleaned monthly.
Remove dust and dirt from the fans and cooling vents using a soft brush and vacuum-cleaner.

Important! Check the air filters periodically and clean before they become clogged!

Clean the air filters placed in the fixture head and base. Use a vacuum cleaner, compressed air or you can wash them and put back dry.
After replacing the air filters, reset the elapsed time counter in the menu "Information" (Information--->Air Filters---> Elapsed Time).

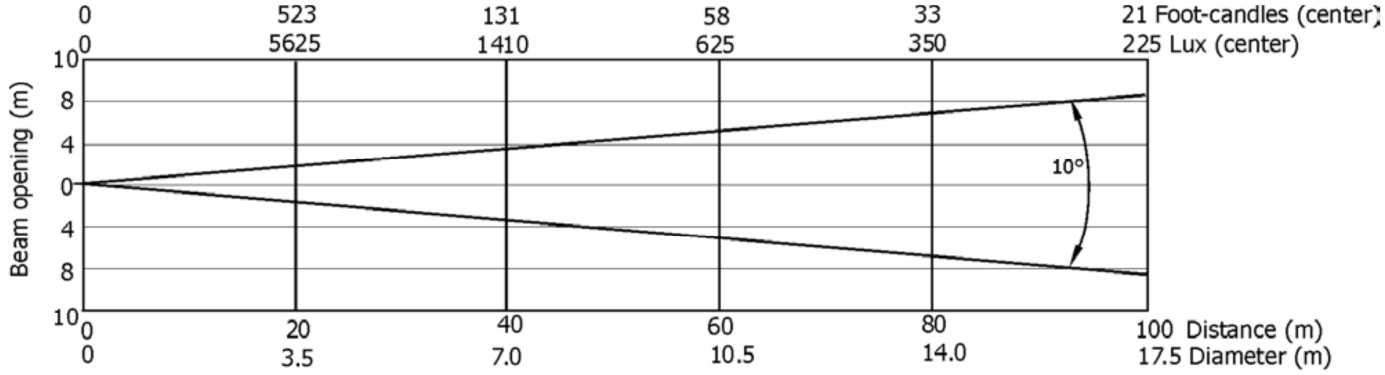
Replacing the fuse.
Before replacing the fuse, unplug mains lead.

1) Remove the fuse holder on the rear panel of the base with a fitting screwdriver from the housing (anti-clockwise).
2) Remove the old fuse from the fuse holder.
3) Install the new fuse in the fuse holder (only the same type and rating).
4) Replace the fuse holder in the housing and fix it.

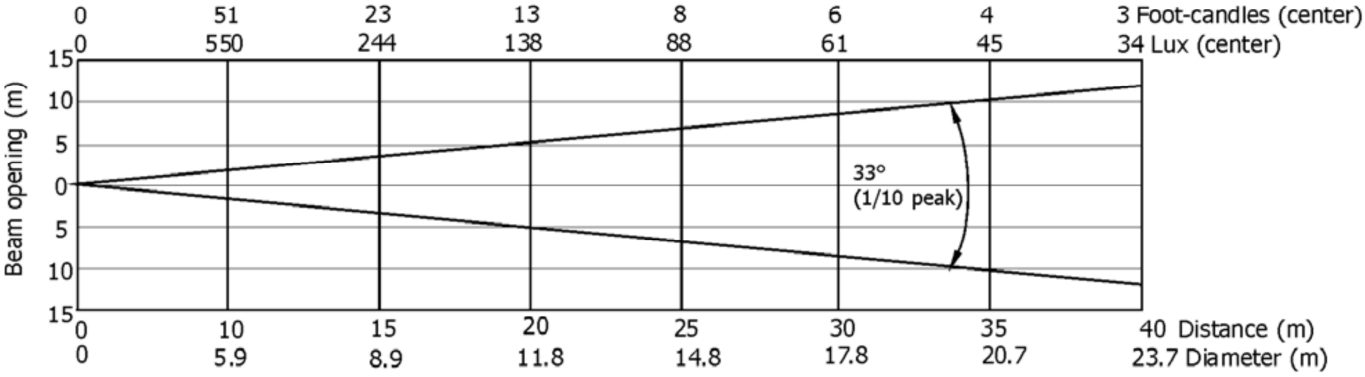
5. Photometric diagrams

All diagrams are for full power of the lamp (Standard Mode)

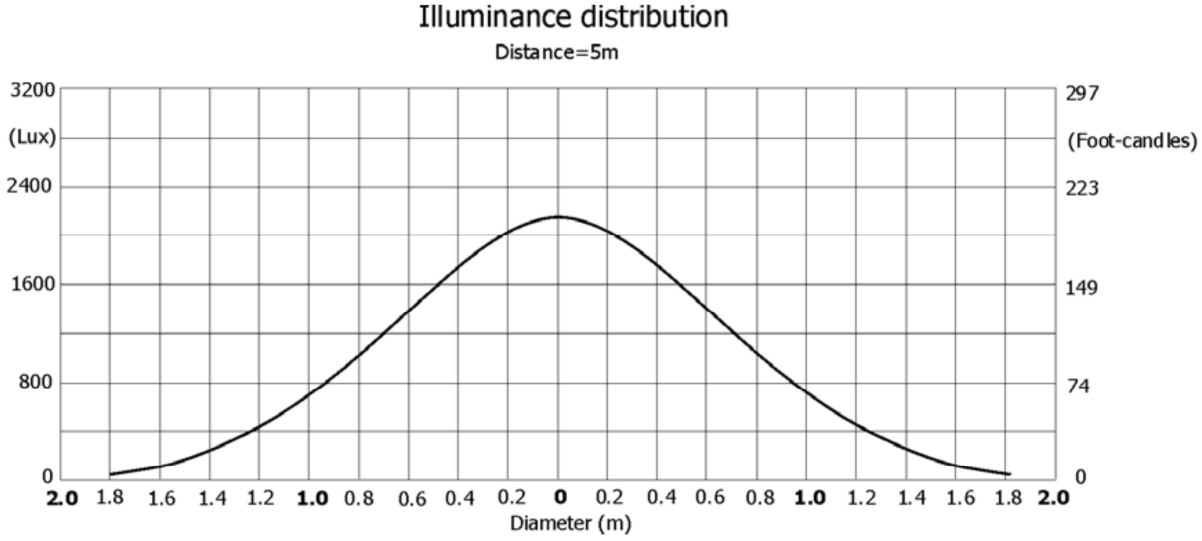
Max. Zoom (Beam application)



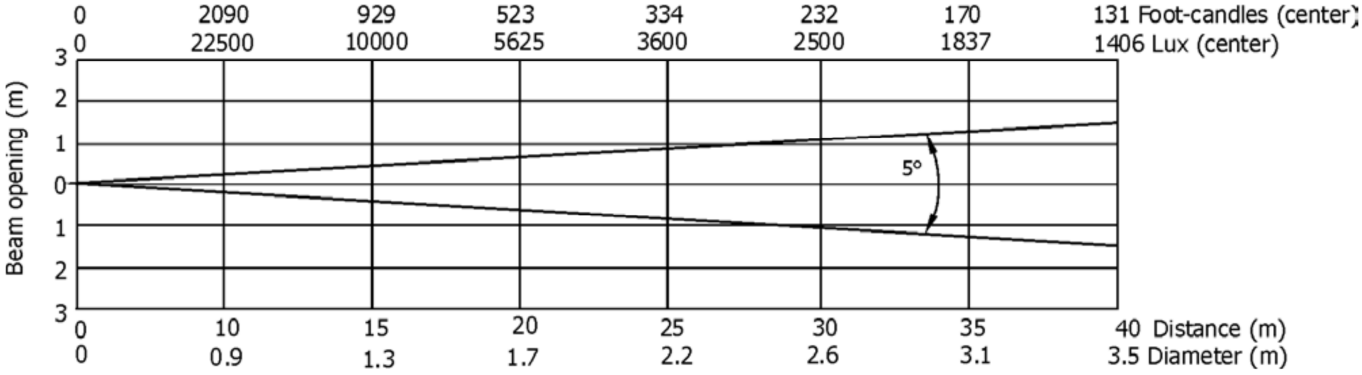
Max. Zoom with frost



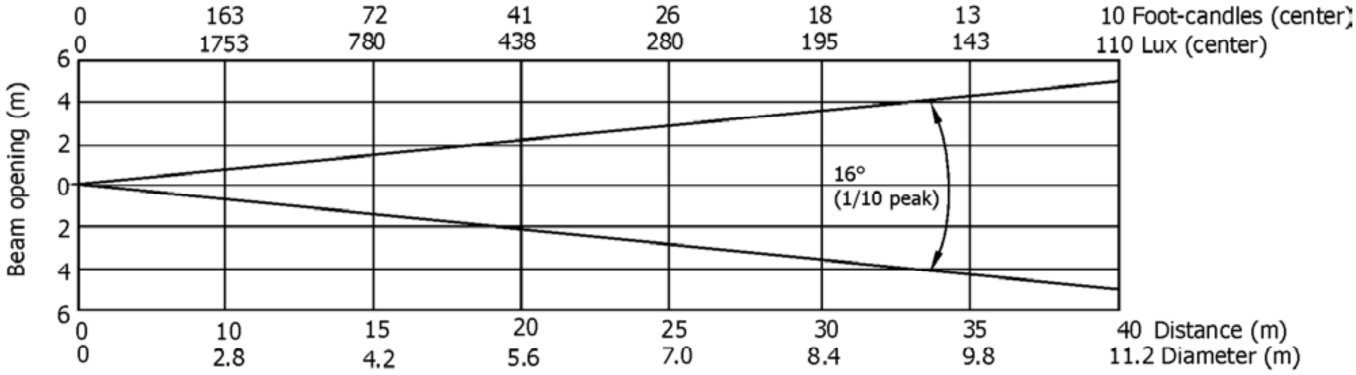
Illuminance distribution



Min. Zoom (Spot application)

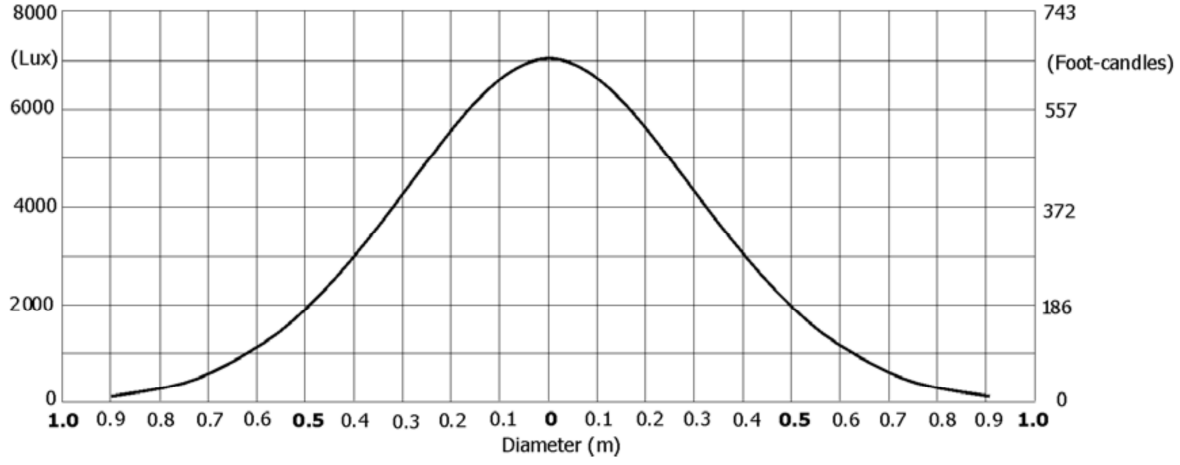


Min. Zoom with frost

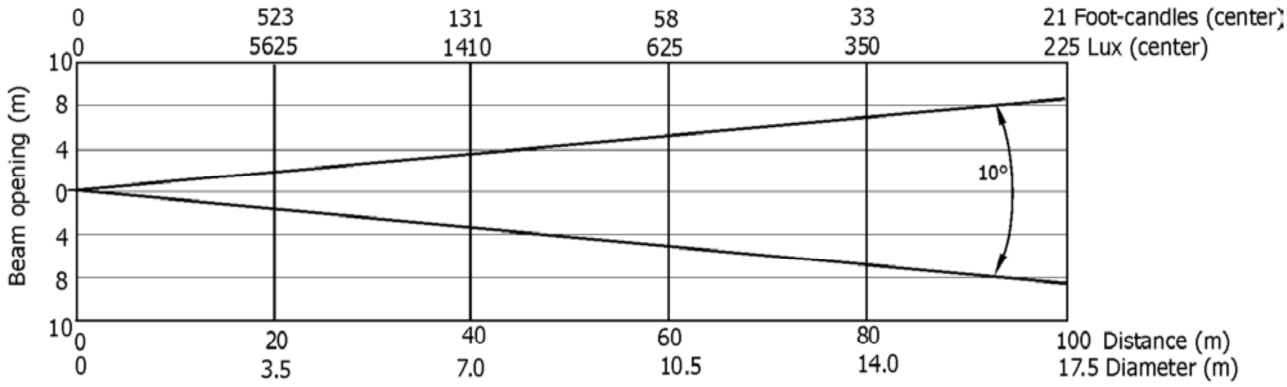


Illuminance distribution

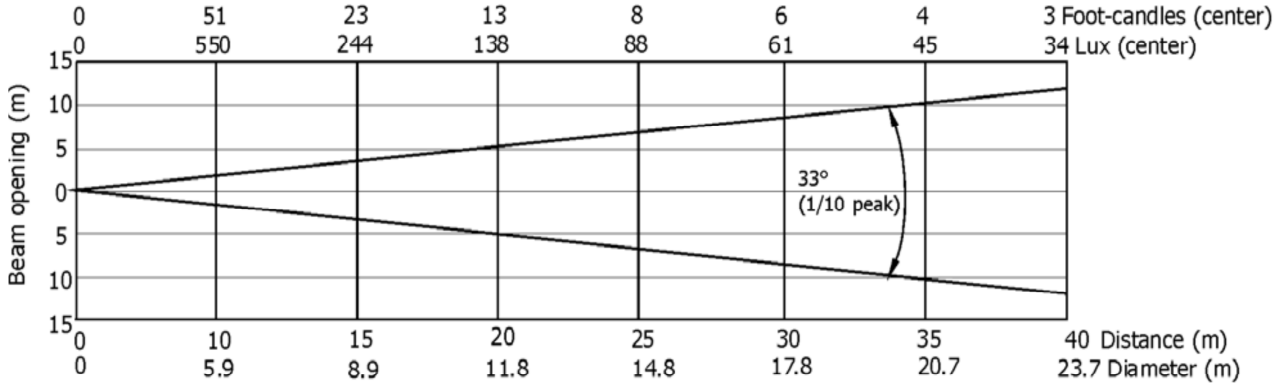
Distance=5m



Max. Zoom (Beam application)

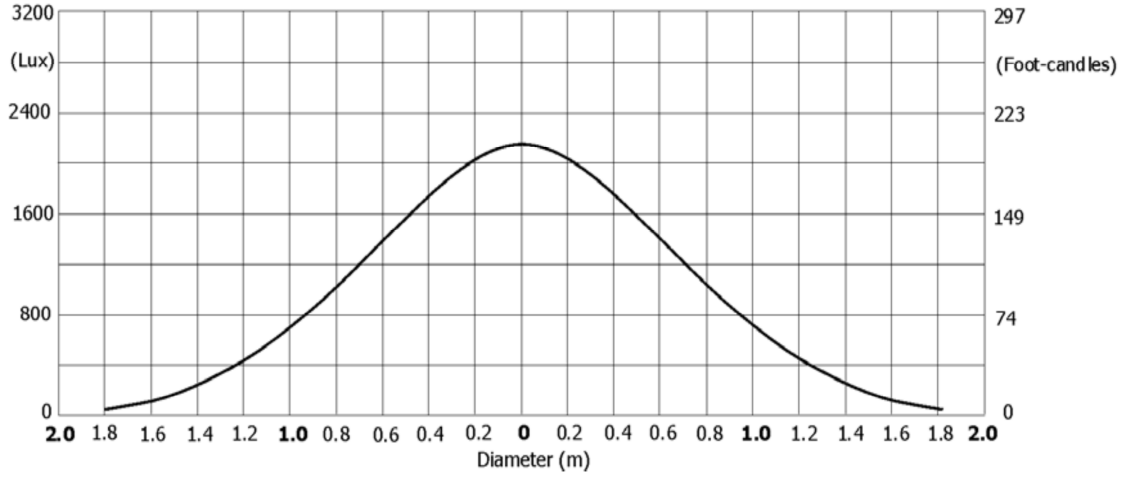


Max. Zoom with frost

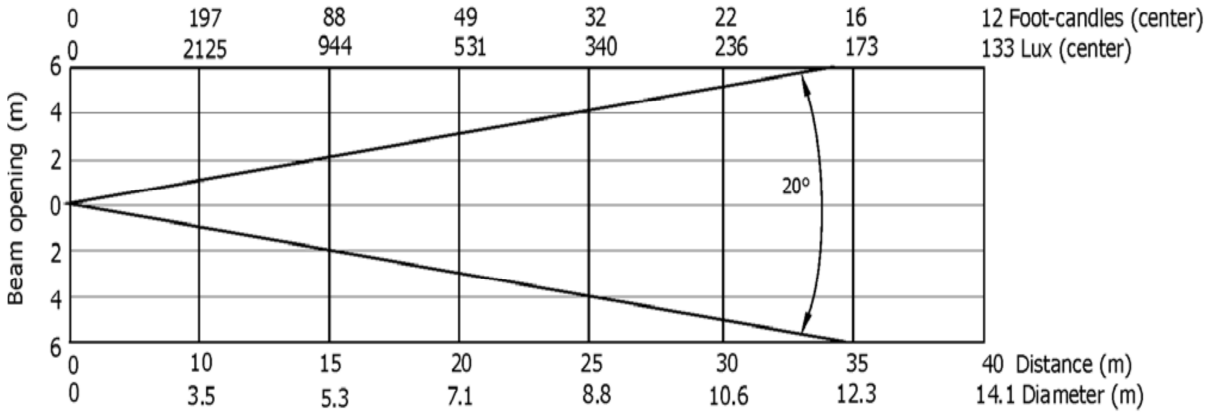


Illuminance distribution

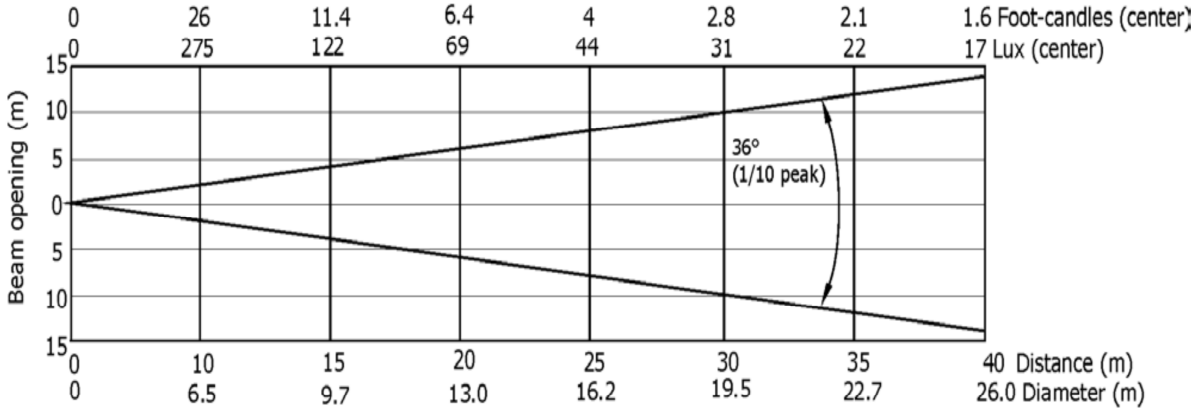
Distance=5m



Max. Zoom (Spot application)



Max. Zoom with frost



Illuminance distribution

Distance=5m